

reducing the oxidized slag in a reducing atmosphere from about 700°C to about 950°C for at least 5 minutes to convert a major portion of the iron in the Fe(III) state to the Fe(II) state.--

--6. (Thrice Amended) A method of beneficiating titania slag to increase the TiO<sub>2</sub> content thereof to at least 90% by weight comprising the steps of:

sizing the titania slag to a particle size from 75 to 850 μm;  
oxidizing the sized slag particles in an oxidizing atmosphere at a temperature from about 700°C to below about 900°C for at least 30 minutes;

stabilizing an anatase phase in the slag, causing the iron present in the slag to concentrate at the exposed surfaces of the slag particles, causing a major portion of the iron in the Fe(II) state to convert to the Fe(III) state, and causing the titanium in the Ti(III) state to be converted to the Ti(IV) state;

reducing the oxidized slag in a reducing atmosphere from about 700°C to about 950°C for at least 5 minutes to convert a major portion of the iron in the Fe(III) state to the Fe(II) state; and

leaching the reduced slag with acid to obtain a beneficiated slag product with an increased TiO<sub>2</sub> content and leach liquor containing the leached impurities.--

--20. (Amended) The method of claim 1 or 6 wherein substantially none of the titanium in the Ti(IV) state is converted to the Ti(III) state during reduction. --

Please add claim 21 as follows:

-- 21. (New) The method of claim 1 or 6, wherein the titania slag comprises ilmenite beach sand. --